



**MASTER FILE**

September 15, 1999

**DSSD CENSUS 2000 PROCEDURES AND OPERATIONS MEMORANDUM SERIES # G-13**

**MEMORANDUM FOR** Michael Longini  
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Management Office

**Attention:** Decennial Design, Policy and Management Branch

**Through:** Howard Hogan *Howard Hogan*  
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**From:** Joseph D. Conklin  
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**Subject:** Trip Report to Webcraft in New Brunswick, NJ

**I. INTRODUCTION**

To understand first hand the quality assurance activities being implemented for printing and to obtain a tour of the plant, the Webcraft plant in New Brunswick, NJ was visited on July 30, 1999. This Webcraft plant is currently printing the Be Counted questionnaire. It will be printing the long form mailout/mailback questionnaire.

The plant is located in central New Jersey approximately 60 miles north of the Delaware state line and 50 miles south of New York, NY. It occupies two separate buildings on the outskirts of New Brunswick. Lighting and housekeeping were more than adequate. The tour was conducted in a very professional manner. Points of contact were government-on-site monitors from the Government Printing Office (GPO) and Decennial Systems and Contract Management Office (DSCMO) as well as the Webcraft representative for the forms contracts.

## II. COMMENTS

### A. WEBCRAFT PERSONNEL COMMENTS

The contracts representative explained the printing process during the tour. This factory has single web and double web presses. The tour focused on the operation of the double web press which was being used to print forms for Census 2000.

The production steps consist of (1) unwind paper from the roll, (2) splice paper for continuous feed, (3) run accumulator tower during splicing to assure continuous feed, (4) pass paper under plate, (5) apply ink, (6) heat paper to set ink, (7) crease the paper for folding, and (8) marry both sides of a two sided form. The contracts representative commented on two quality issues. Some paper samples failed GPO tests for bursting strength, writing quality, and porosity. The paper vendor is challenging the results, claiming other portions of the same lot of paper were working fine. A decision to reject the lot would force a reprinting of many thousands of forms. A final disposition of the paper has not yet been made.

The DSCMO commented on the paper issue after the conclusion of the Webcraft visit. They said it was not necessary for new forms to be printed. A new lot of paper has been approved for use. The Census 2000 forms will be printed on it.

Also discussed was the issue of low  $b^*$  values on some samples.  $b^*$  measures the degree of blue or yellow in an object. The printing plant is not climate controlled. In the present humid weather, the ink sits on top of the paper longer and has a chance to sink in more than usual. The more the ink sinks in the lower the density and  $b^*$  values will be. The tolerances for  $b^*$  should allow for dry back. The traditional allowance for dry back on  $b^*$  is two to four points.

The DSCMO commented on the  $b^*$  issue after the conclusion of the Webcraft visit. DSCMO has collected dry back data. They observe no dry back effect for blueness/yellowness, the quantity measured by  $b^*$ . The only dry back effect they observe is for black ink. Based on the dry back studies being completed for black ink, NPC will be getting new tolerances. The printing plants must continue to enforce the existing tolerances for  $b^*$ .

The technician in charge of transmitting QA data made several comments about the PrintSample program. She has no problem transmitting data. From time to time, backups of the plant's server cause the program to freeze up. When this happens, data has to be reentered. The reasons for the jamming are not known. It would be convenient if all the measuring instruments could be calibrated from the options tool bar of the program. Blanking out nonapplicable fields on the visual inspection panel is not as easy as it could be. A better approach would be for the program to bring up for each jacket number only the visual inspection fields that apply to it.

The spectrophotometer jams frequently if it is used while it recharges. Also, the technician wonders why the spectrophotometer turns off sometimes in the middle of taking readings. The reasons why are not known. The densitometer works fine. However, it is easy for people to turn it upside down, and it does not operate in this position. Reminders have been needed to avoid this problem.

The DSCMO commented on the densitometer and the spectrophotometer issues after the conclusion of the Webcraft visit. They have not observed the problems reported by the Webcraft technician at other printing plants. NPC inspectors, who use the program every day, do not have these problems. DSCMO believes the cause may be user error. No corrective action by BOC is planned at this time. DSCMO recommends Webcraft contact the manufacturer for help with the spectrophotometer problems.

Overall, the PrintSample program is easy to use. It is easier to use than Microsoft Access. However, one has to remember to highlight what readings have not been made before switching to a new measuring instrument. Also, adding new items is not as user friendly as it could be. It would help if adding new items could be simplified. Prior experience with computers is a key factor for learning the software. The learning curve for inspectors with no computer experience is longer. For these people, PrintSample does not seem as user friendly.

The plant runs three shifts. There are three inspectors on first shift, two inspectors on second shift, and two inspectors on third shift. Each inspector can inspect one sixteen page form per hour and one thirty-two page mailout/mailback form every other hour.

For a sixteen page form, inspection times vary with experience. Ten to fifteen minutes is typical. Fifteen to thirty minutes is typical for a thirty-two page form. This includes both color and visual inspection. A defect can trigger a Defect Demerit Notification. The notice must be acted on by the time of the next sample. Otherwise, the issue is escalated to the foreman. Transmitting the inspection data takes three minutes per file. The technician transmits early in the morning. The technician commented on some other issues. She said a specification for frayed edges is needed. She wonders why the rub test is performed when the data is not collected.

The DSCMO commented on the frayed edges issue after the conclusion of the Webcraft visit. It said the requirement to change cutting blades at regular intervals covers this situation. A frayed edge should trigger a blade change.

The DSCMO also commented on the Sutherland rub test issue. There is a space in the PrintSample program for recording the rub test results. This is where the data should be collected. The Webcraft technicians should speak to the onsite monitors or phone the contacts provided in the PrintSample user guide if they need help to locate this part of the program.

## B. CENSUS BUREAU AND GOVERNMENT PRINTING OFFICE MONITORS

The onsite monitors shared their views on quality issues and the ease of use of the PrintSample program. Since the plant is not air conditioned, Webcraft must adjust the fountain solution to handle the variations induced by the high humidity. Some readings for density exceed the stated tolerance, but they are acceptable within the margin of error in the equipment. Some b\* readings are out of tolerance even after accounting for the margin of error. The onsite monitors follow up and confirm the quality problems caught by the Webcraft personnel. If a problem b\* reading is found on a sample, they search until in specification b\* values are found. Then the out of specification b\* forms are purged and reprinted.

Lately the onsite monitors have noted increased resistance in dealing with out of specification b\* values. The personnel have been saying the forms can still function even though b\* is out of tolerance. The onsite monitors wonder if RIT has told the plants that there is a margin of safety beyond the stated tolerances. GPO and the Census Bureau are in discussions about how to deal with the tolerance issue. The onsite monitors feel the plants should not be told about any margins of safety or else the purpose of the QA program is defeated.

The computer used by the onsite monitors is not hooked up to a printer. The installation instructions for new versions of the PrintSample software can't be printed out. There are not enough phone lines so that problems with the program can be diagnosed while the program is up and running.

The DSCMO responded to the phone line issue after the conclusion of the Webcraft visit. Arrangements have been made to move the onsite monitors to an office in which the phone has more than one line. The office used by the onsite monitors on the day of the Webcraft visit was a temporary location while the new office was being prepared.

The GPO monitor lacks Internet access. She has to wait until a Census Bureau person shows up before her data can be transmitted. This is an inconvenience. The GPO monitor tried to transmit data over the July 4<sup>th</sup> holiday weekend after the Census Bureau monitors had left. She needed immediate assistance with a problem,

but the help desk could not provide it. It could only offer to refer the issue to RIT. No help became available until the following Monday when RIT personnel returned to their office. The GPO monitor does not want to use the help desk again.

One of the Census Bureau monitors said the PrintSample program was user friendly, but the training in the class went too fast. There was one computer for three people. There was not enough hands on practice. A list of tips on how to add new batches would have helped, too. One problem with the program occurs when the dials on the measuring equipment are turned too fast. The program responds with a "You are done with this form" message. The user has to quit the program to start over.

More than one color is used to highlight items in the program. This is confusing to new users. A few days before one of the Census Bureau monitors thought the sample number was not highlighted when it was. The same color should be used to indicate all highlighted items. Another Census Bureau monitor is waiting for new instructions on how to transmit data. She says transmitting is the hardest function for new people to learn. One on one training is needed for transmission.

#### C. LIST OF SUGGESTED IMPROVEMENTS TO PRINTSAMPLE

For reference, the complete list of suggested improvements to PrintSample from all sources follows here:

1. Be able to calibrate all measuring equipment from the options tool bar.

Response from the DSCMO: The software exists to link the spectrophotometer to the options tool bar via the key wizard. This software does not exist for the densitometer or the bar code reader. This information will be communicated to the Webcraft technician.

2. Display only the visual inspection fields needed for a given jacket number.

Response from the DSCMO: It is too late in the printing process to change the PrintSample software. We could not do it in the beginning because we did not know exactly which visual inspections fields would apply to which forms. We were forced to use a generic screen. Some of the printing plants have made arrangements with their computer personnel to devise a work around that brings up blank fields for the visual inspection. The inspectors can fill in only the fields that apply to a form. Any printing plant that wants to do this is welcome to.

3. Figure out why spectrophotometer turns off in the middle of reading.

Response from the DSCMO: Already covered above.

4. Remove the need to highlight which variables have not been measured when changing measuring instruments.

Response from the DSCMO: Already covered above.

5. Simplify the process of adding new items to a record.

Response from the DSCMO: DSCMO says the process of adding new items cannot be simplified any further. The contacts listed in the PrintSample user guide should be called if users have trouble adding new items.

6. Figure out a way to keep from turning the measuring equipment dials so fast the "You are done with this form" message pops up too early.

Response from the DSCMO: This is the first time this problem has been reported. We believe this is a new user error. More practice should allow this monitor to refine her technique so this problem is avoided.

7. Use only one color for highlighting items.

Response from the DSCMO: Only one color is used to highlight items. Depending on how the computer monitor is configured, there can appear to be more than one color. The configuration of the monitor should be checked as a first step.

### III. CONCLUSIONS

- A. The Census Bureau and GPO should decide quickly on how to enforce the specification for  $b^*$  in the plant.

PURPOSE: To meet the goals of the quality assurance program; to enforce process control practices by the contractor.

PROPOSAL: Modify the contractual specification to include the safety margin.

Response from the DSCMO: The contractual specifications will not be changed. The forms and printing branch of DSCMO is working with BOC management to secure the cooperation of GPO to enforce the standards as written.

- B. Plants should not be told about a margin of safety in the tolerances for b\*.

PURPOSE: To meet the goals of the quality assurance program; to enforce process control practices by the contractor.

PROPOSAL: Request RIT and GPO not to tell plants about safety margin.

Response from the DSCMO: The forms and printing branch of DSCMO believes GPO is telling the plants about the safety margin. The branch is working with BOC management to secure the cooperation of GPO to enforce the standards as written.

- C. When sending out new installation directions, the help desk should offer to fax the directions to locations that are not hooked up to a printer.

PURPOSE: Make it easy for all field representatives to follow directions for updating the PrintSample program.

PROPOSAL: Instruct the help desk to send faxes of new installation directions to any location requesting them.

Response from the DSCMO: The forms and printing branch of the DSCMO will fax hard copies of the installation instructions for future versions of the PrintSample software.

- D. The GPO monitors should be given Internet access before September.

PURPOSE: GPO monitors hold onto their data until they can get help from Census people to transmit results. With their own Internet access, they can send data as soon as it is ready.

PROPOSAL: Ask GPO to commit to Internet access by September.

Response from the DSCMO: The forms and printing branch wants GPO to implement its Internet access without BOC having to turn over the Internet account names and passwords of its own onsite monitors. GPO has not agreed to this. DSCMO will continue to work on resolving the issue. This is the main delay in GPO's implementation of Internet access.

- E. RIT, BOC, and NPC should be asked if they can provide after normal business hours coverage for hardware or software problems in the field. Someone on pager access might be needed.

PURPOSE: Insure field representatives can get help whenever they run into a problem with the PrintSample program.

PROPOSAL: Ask for DSCMO's thoughts on round the clock coverage for PrintSample problems.

Response from the DSCMO: RIT and NPC will not be providing round the clock coverage. After hours problems are not occurring frequently enough to justify the expense. The user guide to the PrintSample software includes a list of DSCMO contacts who may be phoned any time for emergencies. DSCMO will redouble its efforts to inform all the onsite monitors of this list. The policy of responding to contractors' PrintSample problems by the next business day will continue. Contractor personnel are not to phone DSCMO HQ personnel outside of business hours.

- F. The onsite monitor training should be changed to include more hands on practice with PrintSample and in particular how to transmit QA data.

PURPOSE: The present training does not allow hands on practice for all users for aspects of the PrintSample program. The field representatives are not as well trained as they could be. More hands on practice would minimize this.

PROPOSAL: Ask GPO to change the field representative training.

Response from the DSCMO: DSCMO does not intend for users to completely master PrintSample by the end of the training. Training is followed by OJT. Newly trained onsite monitors are paired with experienced monitors for up to three weeks in the field so they can practice and become proficient. No more hands on practice is planned for the PrintSample training course. If new onsite monitors need extra help when they are in the field, they should call the contacts listed in the PrintSample user guide. HQ personnel in the forms and printing branch will be glad to assist with transmitting data.

- G. The comments of the Webcraft technician on how to improve PrintSample should be incorporated the next revision of the program.

PURPOSE: To make the next version of PrintSample easier to use.

PROPOSAL: Ask NPC to pursue these major suggestions: customize the display of visual inspection attributes so the user sees only what is needed for a particular



jacket number, simplify the process of adding new items to a record, remove the requirement to highlight what remains to be measured before switching instruments, and let all instruments be calibrated from the options tool bar.

Response from The DSCMO: Already covered above.

cc:

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